Objects, concepts, terms

Introduction to terminology work

Terminography

The recording, processing and presentation of terminological data acquired by terminological research.

NOTE:
'Terminography' replaces the older terms 'terminological lexicography' and 'special lexicography'.

(ISO 1087 - 1990)

ISO 1087-1:2000

TERMINOLOGY WORK

Work concerned with the systematic collection, description, processing and presentation of concepts and their designations

Objects and concepts

OBJECTS - real or imagined - form reality.

CONCEPTS are entities constructed by means of abstraction or other procedures.
They exist only in the mind of human beings.

OBJECTS are fixed in time and space; they cannot change without losing their original character.
A change will convert them into other objects.

CONCEPTS do not have this fixation in time and space.
They change according to the progress of cognition. A change of the intension of a concept leads to a new concept, but not necessarily to a new term.

The quantitative relation between objects and concepts may change from one science to another:

ex.	history archaeology	<--->	physics, chemistry mathematics, logic
	Simón Bolívar II World War French Revolution		conceptualization dominates

Therefor:

OBJECTS AND CONCEPTS

ARE EQUALLY RELEVANT

FOR TERMINOLOGY

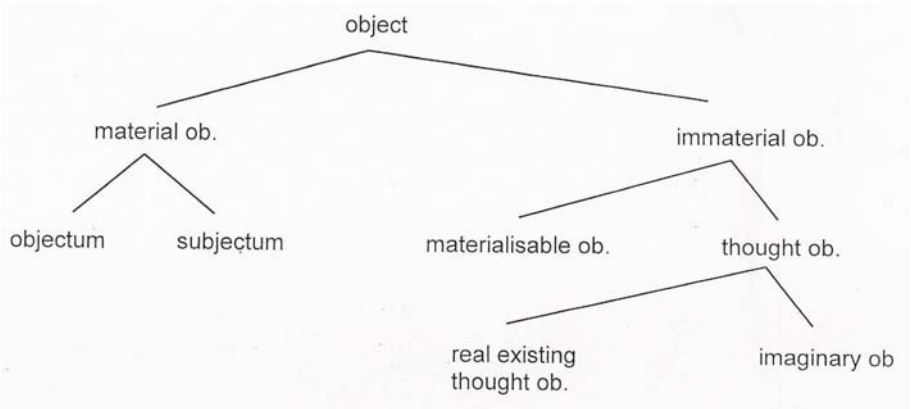
OBJECT

anything perceivable or conceivable

NOTE:

Objects may be material (e.g. an engine, a sheet of paper, a diamond), immaterial (e.g. conversion ratio, a project plan) or imagined (e.g. a unicorn).

ISO 1087 – 1



Definitions of objects I

1. ***Material object:*** object which exists independently from human beings, it has a physical form which directly or indirectly can be perceived by the senses; its relation to space and time is independent of human beings.

2. ***Objectum:*** material object which exists as an 'Abbild' in the mind of the human being. The object is not present in the moment of imagining it, but it must have been at least once accessible to the senses.

3. ***Subjectum:*** material object which is present and as such it is the sign of itself.

4. ***Immaterial object:*** object without physical form whose existence and relation to space and time is given through the imagining subject.

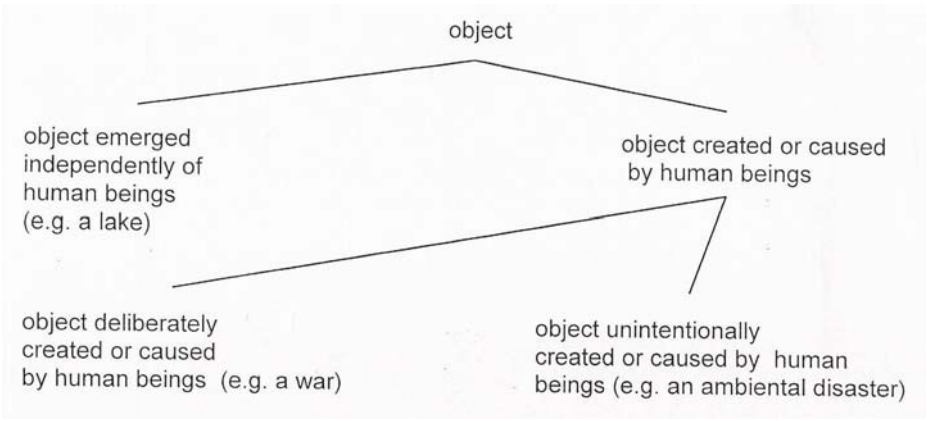
Definition of objects II

5. ***Materialisable object:*** immaterial object which receives a physical form by a creative physical act and thus becomes a material object, for instance a planned building.

6. ***Thought object:*** immaterial object which only has mental existence and therefore is related to the imagining subject whereby the space-time-relation is realised.

7. *Real* ***existing, thought object:*** thought object which has a mental, but real existence, for instance the legal transfer of an estate.

8. ***Imaginary object:*** thought object which exists only in the imagination of the imagining subject; it has no and cannot have a material form in the real world, however it can exist in the world of belief and faith.



CONCEPT

AS

1. **UNIT OF THOUGHT**
2. **UNIT OF KNOWLEDGE**
3. **UNIT OF COGNITION**

ISO 1087/1990

CONCEPT

A unit of thought constituted through abstraction on the basis of properties common to a set of objects.

NOTE:

Concepts are not bound to particular languages.

They are, however, influenced by the social or cultural background.

Concept

ISO 1087 – 1:2000

Unit of knowledge created by a unique combination of characteristics.

NOTE:

Concepts are not necessarily bound to particular languages. They are, however, often influenced by the social or cultural background which often leads to different categorizations.

Concept as unit of thinking
Proposed definition

concept constituted by the individual ideas and knowledge of the thinker; the constituting chunks of knowledge and ideas have not necessarily been submitted to intersubjective proof and may be erroneous; its life cycle depends on the cognitive changes taken place in the mind of the thinker.

Concept as unit of knowledge
Proposed definition

concept constituted by all characteristics (chunks of knowledge) intersubjectively recognised and agreed upon by a professional community at a certain point of time; it has a life cycle determined by cognition dynamics.

Concept as unit of cognition
Proposed definition

unit of knowledge which life cycle has finished and therefore will be subject to modifications of a certain number of characteristics in accordance with cognition dynamics; the result will be a new and independent unit of knowledge.

ISO 1087 /1990

CHARACTERISTIC

Mental representation of a property of an object serving to form and delimit its concept.

ISO 1087-1:2000

Characteristic

Abstraction of a property of an object or a set of objects.

Note:
Characteristics are used for describing concepts.

ESSENTIAL CHARACTERISTIC

Characteristic which is indispensable to understanding a concept

DELIMITING CHARACTERISTIC

Essential characteristic used for distinguishing a concept from related concepts.

Note: The delimiting characteristic SUPPORT FOR THE BACK may be used for distinguishing the concepts STOOL and CHAIR.

ISO 1087-1:2000

TYPE OF CHARACTERISTICS

Category of characteristics which serves as the criterion of subdivision when establishing concept systems

Note:

The type of characteristics 'COLOUR' embraces characteristics 'BEING RED, BLUE, GREEN', etc. The type of characteristics 'MATERIAL' embraces characteristics 'MADE OF WOOD, METAL', etc.

ISO 1987-1:2000

INTENSION

Set of characteristics which makes up the concept.

ISO 1087-1:2000

SIMPLIFIED EXAMPLE OF INTENSION

MOTOR VEHICLE	LORRY	TANKER
1. VEHICLE		
2. MOTOR POWERED	1 - 3	
3. HAS STEERING MECHANISM	+	1 - 4
4. FOR TRANSPORTATION OF GOODS		+
5. FOR TRANSPORTATION OF LIQUIDS		

ISO 1087/1990

EXTENSION

Totality of all specific concepts included in a generic concept.

Note:

'Extension' is not to be used for the enumeration of partitive concepts.

ISO 1087 – 1:2000

EXTENSION

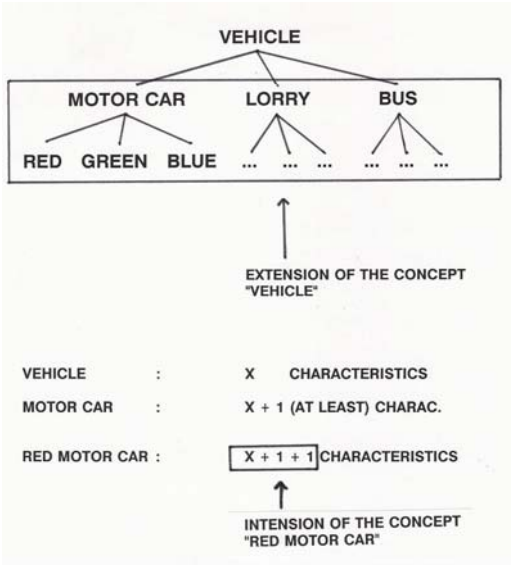
Totality of objects to which a concept corresponds.

EXAMPLES OF EXTENSION

1. THE EXTENSION OF THE CONCEPT 'ELEPHANT' IS
   - 'INDIAN ELEPHANT'
   - 'AFRICAN ELEPHANT'

2. THE EXTENSION OF THE CONCEPT 'SCANDINAVIAN COUNTRIES' IS
   - 'DENMARK'
   - 'NORWAY'
   - 'SWEDEN'

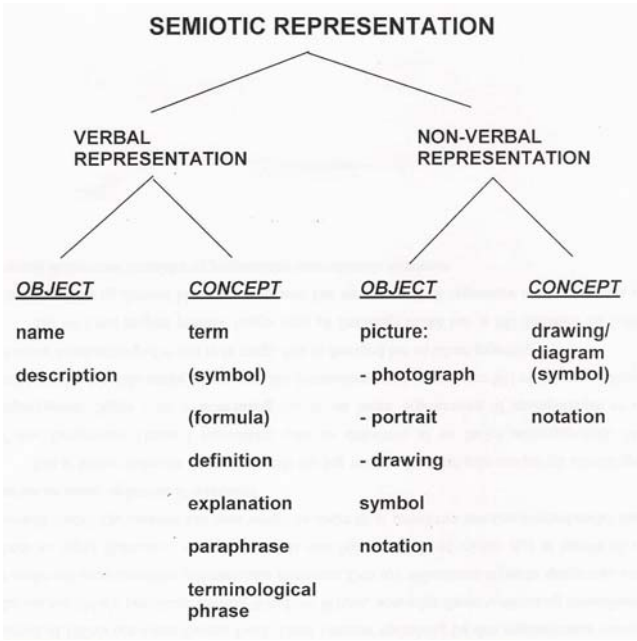
3. THE EXTENSION OF THE CONCEPT 'NORDIC COUNTRIES' IS
   - 'DENMARK'
   - 'FINLAND'
   - 'ICELAND'
   - 'NORWAY'
   - 'SWEDEN'



FUNCTIONS OF THE CHARACTERISTICS

1. Determine the intension of a concept
2. Identify changes in the intension
3. Definitions
4. System of concepts
5. Formation of motivated terms
6. Equivalence

SEMIOTIC REPRESENTATION



DESIGNATION

Representation of a concept by a sign which denotes it

Note:

In terminology work three types of designations are distinguished: symbols, appellations (names) and terms.

ISO 1087-1

TERM

Verbal designation of a general concept in a specific subject field.

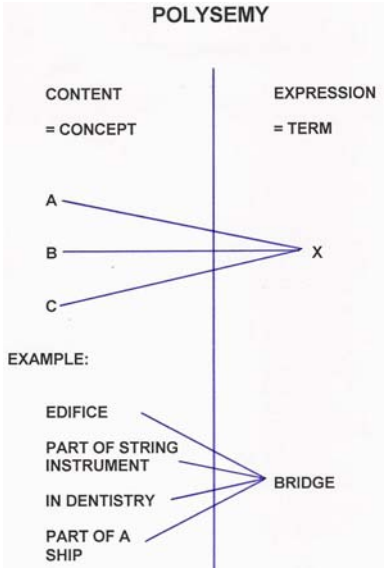
Note:

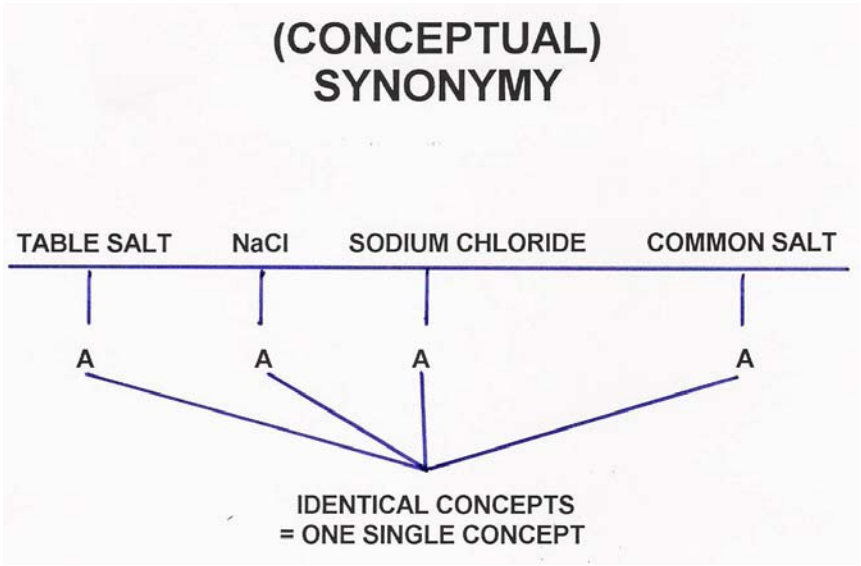
A term may contain symbols and can have variants, e.g. different forms of spelling.

ISO 1087-1

RELATIONS BETWEEN CONCEPT AND TERM

1. MONOSEMY
2. POLYSEMY
3. HOMONYMY
4. SYNONYMY
5. EQUIVALENCE

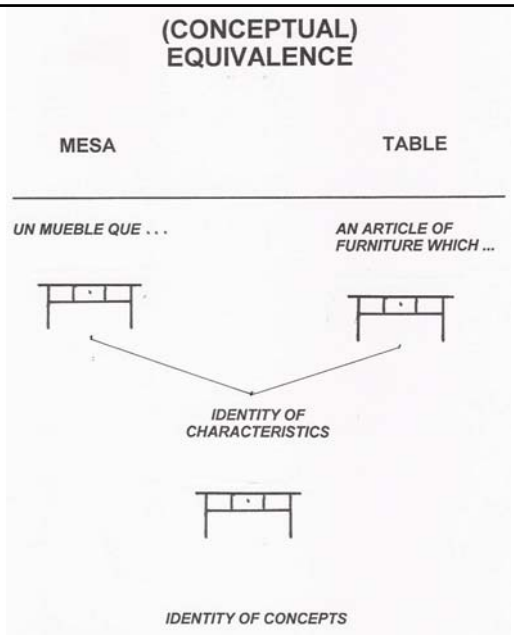

POLYSEMY
CONTENT
= CONCEPT
EXPRESSION
= TERM
A
B
C
X
EXAMPLE:
EDIFICE
PART OF STRING INSTRUMENT
IN DENTISTRY
PART OF A SHIP
BRIDGE


(CONCEPTUAL)
SYNONYMY
TABLE SALT
NaCl
SODIUM CHLORIDE
COMMON SALT
A
A
A
A
IDENTICAL CONCEPTS
= ONE SINGLE CONCEPT

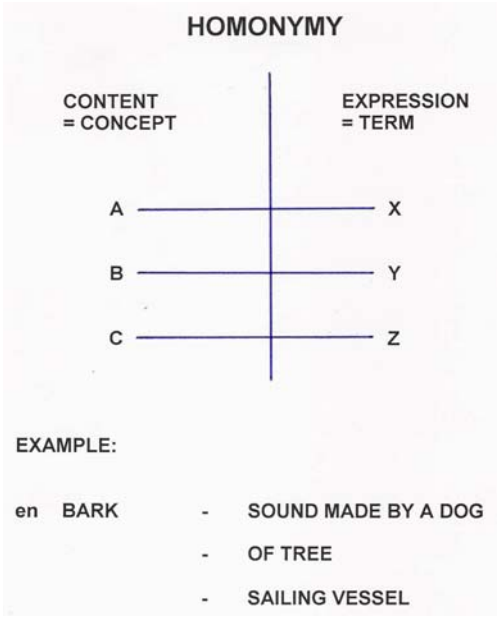
SYNONYMY

WITHIN A	WITHIN A
COUNTRY	LINGUISTIC COMMUNITY
↓	↓
RELATED TO	RELATED TO
A TEXT	LINGUISTIC REGION

(CONCEPTUAL) EQUIVALENCE



HOMONYMY



EXAMPLE:

en BARK - SOUND MADE BY A DOG
- OF TREE
- SAILING VESSEL

TERM FORMATION

1. TERMINOLOGISATION
2. DIFFERENT TYPES OF COMPOUNDING
3. DERIVATION
4. SHIFT OF WORD-CLASS - CONVERSION
5. IMPORTATION OF LOAN WORD
6. ABBREVIATION

TERMINOLOGISATION

BUTTERFLY - INSECT

- TYPE OF NUT

FOOT - PART OF BODY

- MEASUREMENT OF LENGTH
- IN TECHNICAL COMPOUNDS WITH VARIED MEANINGS
  - FOOT OF SEWING MACHINE
  - BASE
  - FOOT OF A PAGE (FOOTNOTE)
  - FOOT OF A LINE
  - FOOT OF A BED

TERM MOTIVATION

1. ***PHONETIC MOTIVATION***
   - irrelevant → terminology
2. ***MORPHOLOGICAL MOTIVATION*** (derivation and composition)
   - absolutely relevant → terminology
3. ***SEMANTIC MOTIVATION*** (metaphor and metonymy)
   - absolutely relevant → terminology

ISO 704:2000, 7.3.2

TRANSPARENCY

A term is considered transparent when the concept it designates can be inferred, at least partially, without a definition. In other words, its meaning is visible in its morphology. To make a term transparent, a key characteristic, usually a delimiting characteristic, is used in the creation of the term itself.

RULES FOR TERM FORMATION

According to "Terminologi som vetenskapsgren", p. 217 f.

Linguistic principles

1. The term must relate directly to the concept and express the concept clearly
2. The term should be lexically systematic
3. The term must follow the general rules for forming words and the syntactic rules of a language
4. The term must be productive with regard to derivation
5. The term must not be pleonastic
6. The term must be short without sacrificing precision
7. The term should not have synonyms

8. The term should not have morphological variants
9. The term should not have homonyms
10. The term should be monosemous
11. The contents of the terms should be precise
12. The contents should be independent of the text
13. Motivation
14. The term must be phonetically and graphically simple (easy to pronounce and to write)

Sociolinguistic principles

1. The term must correspond to a given need
2. Aesthetic value
3. The term must correspond to the relevant linguistic level (register)
4. Relative degree of specialisation
5. The term should correspond to a given linguistic policy

Methodological principles

1. The term should be developed in cooperation with experts
2. The term should be formed according to existing models
3. The term should be developed on the basis of proper language resources
4. The system of which the term will be part of must be taken into account
5. Abbreviations should be used

DESCRIPTION OF AN OBJECT

THE DESCRIPTION OF AN OBJECT CONSISTS OF THE ENUMERATION OF ITS **PROPERTIES** INCLUDING THOSE INDICATING TIME AND SPACE.

EXPLANATION OF A CONCEPT

ACCORDING TO ÖNORM A 2704:9

IF A DEFINITION, WHATEVER THE REASONS MAY BE, IS NOT POSSIBLE, THE INTENSION OF THE CONCEPT IS TO BE EXPLAINED BY THE INDICATION OF THE CHARACTERISTICS WITHOUT RELATING THEM TO A GIVEN SYSTEM OF CONCEPTS.

DEFINITION

Representation of a concept by a descriptive statement which serves to differentiate it from related concepts

ISO 1087-1:2000

INTENSIONAL DEFINITION

Definition which describes the intension of a concept by stating the superordinate concept and the delimiting characteristics.

Note: The following is an example of an intensional definition for the concept 'incandescent lamp':

'electric lamp in which a filament is heated by an electric current in such a way that it emits light'

ISO 1087-1:2000

PARTITIVE DEFINITION

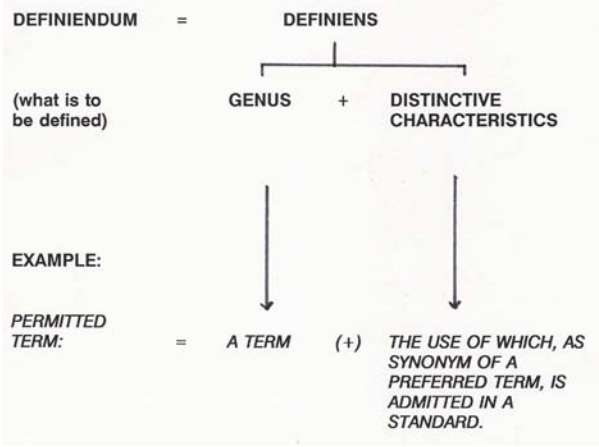
A definition based on the enumeration of the concepts that refer to the main parts of an object covered by a superordinate concept in a partitive relation

Example:

The standard computer workstation is made up of a CPU, a display terminal, variable user input interfaces (e.g. keyboards, mice, scanners, or any combination of these items), storage media (disk and tape drives and the like) and various output devices (e.g. printers, plotters, speakers, etc.)

ISO 12 620:2000

FORMAL STRUCTURE OF THE DEFINITION



EXTENSIONAL DEFINITION

Description of a concept by enumerating all of its subordinate concepts under one criterion of subdivision.

Examples:

Family 18 in the Periodic Table:

helium neon, argon, crypton, xenon, and radon.

Noble gas:

helium, neon, argon, cryton, xenon or radon

ISO 1087-1:2000

Defective definitions I

1. INCOMPLETE DEFINITION

'A screw is an element which joins.'

Defective definitions II

2. EXCESSIVELY RESTRICTED DEFINITION

'Medicine bottles are bottles made of glass used to keep medicine in.'

Defective definitions III

3. EXCESSIVELY BROAD DEFINITION

'Copper is a chemical element which belongs to the category "metals"'.

Defective definitions IV

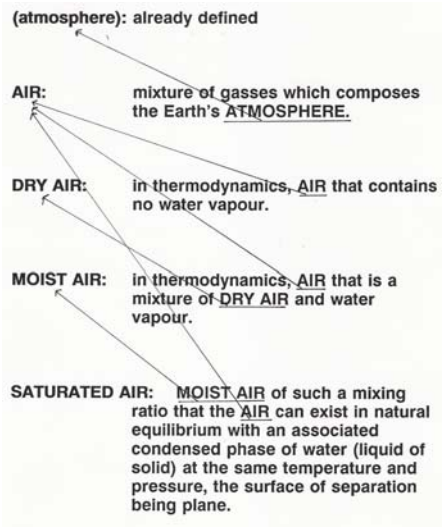
4. CIRCULAR DEFINITION

a) 'Hydrogen oxide is water which consists of 2 atoms of hydrogen and 1 atom of oxygen'.

b) 'ISO' is an institution which issues ISO standards'.

'ISO standards are issued by the standardization institution ISO'.

System of definitions



FUNCTIONS OF THE DEFINITION

1. DETERMINATION OF A CONCEPT
2. FIXATION OF A CONCEPT
   (--> STANDARDIZATION)
3. ISOLATION OF A CONCEPT FROM OTHER, RELATED CONCEPTS
4. SETTING CONCEPTS IN RELATION TO ONE ANOTHER
   (--> SYSTEMS OF CONCEPTS)

ISO Draft Standard 1087

TERMINOLOGICAL PHRASE

PHRASE IN WHICH AT LEAST TWO ELEMENTS (TERMS) ARE SYNTACTICALLY LINKED AND THUS FORM AN UTTERANCE WITH SUBJECT-FIELD-SPECIFIC CONTENT; THE INTERNAL COHERENCE OF THE ELEMENTS IS BASED ON THEIR CONCEPTUAL COMBINABILITY.

ISO 12620:1999(E)

A.2.1.18 phraseological unit

DESCRIPTION: Any group of two or more words that form a unit, the meaning of which frequently cannot be deduced based on the combined sense of the words making up the phrase.

NOTE: Although they are made up of more than one word and frequently contain more than one concept, phraseological units can be treated as individual terminological units in terminology databases. In this sense they are grouped together with "terms". They can, however, also be treated as contextual material in some databases.

EXAMPLES: See examples in A.2.1.18.1-A.2.1.18.3.

SUBJECT	VERB	OBJECT
	TO FIRE	A RULE
	AFSIGE	EN DOM/KENDELSE
WATER/ALCOHOL	EVAPORATES	
	TIGHTEN	SCREW/NUT
EISEN	REAGIERT MIT	SALZSÄURE
DER STROM	FLIESST	

CONCEPTS WITH

'VERBAL' CHARACTERISTICS	'OBJECT' CHARACTERISTICS
	1. METAL 2. IRON 3. COPPER
to forge	4. MERCURY 5. PLASTIC 6. LEAD
requires:	
'forgeable' materials	'forgeable' ?
1. yes/no 2. yes 3. yes 4. no 5. no 6. no	

DISTRIBUTION OF CHARACTERISTICS

1

1. WITHIN ONE LANGUAGE

A) TESTAMENT — ERRICHTEN

B) DAS ERRICHTEN
DES T. ERFOLGT
DIE ERRICHTUNG

C) DIE TESTAMENTSERRICHTUNG — ERFOLGT

2. TRANSLATION

2

EINE FLÜSSIGKEIT — HINAUFPUMPEN

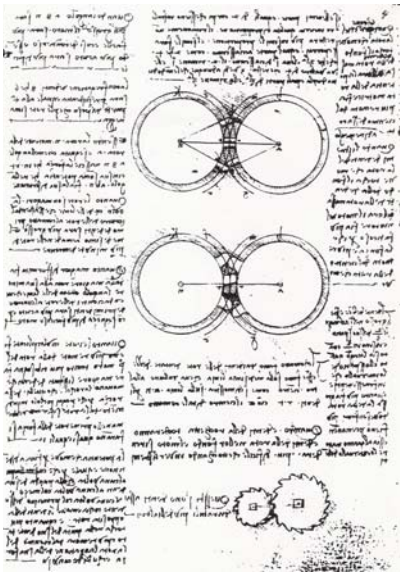
ELEVAR — UN LIQUIDO — POR BOMBA

direction + action

technical medium

A PHRASEOLOGICAL UNIT

1. IS CREATED BY CONCEPTUAL SYNTHESIS OF TWO OR MORE CONCEPTS
2. DESIGNATES USUALLY A MORE COMPLEX CONCEPT
3. HAS CHARACTERISTICS
4. CAN BE DEFINED
5. CAN BE ORDERED IN A CONCEPTUAL SYSTEM
6. CAN BE TRANSFORMED
   - DEPENDING ON THE LANGUAGE SYSTEM -
   INTO A (COMPLEX) TERM
7. SHOULD BE TREATED AS CONCEPT IN TERMINOLOGICAL DATA BANKS



Leonardo da Vinci (1452 - 1519), Tekst og tegning af tandhjul , Codex Madrid I, Folio 5 recto).

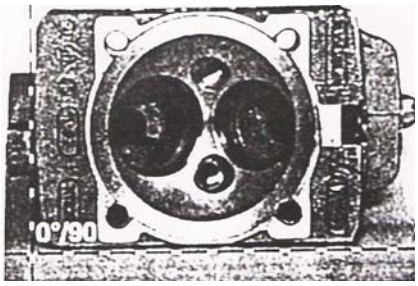
HOW CAN DIFFERENT TYPES OF OBJECTS BE REPRESENTED

	PHOTO	PORTRAIT	DRAWING	MODEL
MATERIAL OBJ.				
OBJECTUM	-	+	+	+
SUBJECTUM	+	+	+	+
IMMAT. OBJ.				
MATERIALISABLE OBJ.	-	+	+	+
THOUGHT OBJ.				
REAL EXISTING THOUGHT OBJ.	-	-	-	-
IMAGINARY OBJ. ***	-	+	+	+

*** Only if a pictorial imagination exists, e.g. a god, ogre, unicorn, etc.

Resterne af Athena Pronaia templet i Delfi. Det var ikke den vigtigste helligdom på stedet, men står i dag som måske den smukkeste overlevering fra en svunden tid. De tre doriske søjler stammer fra rundtemplet – *tholos* – i midten. Ligesom også Apollontemplet blev det ødelagt ved det store jordskælv i + 373, men genopbygget tre år senere. Se rekonstruktionen på næste side.

Rekonstruktion af rundtemplet i Athena Pronaia helligdommen i Delfi. (Tegning: H. Pomtow).



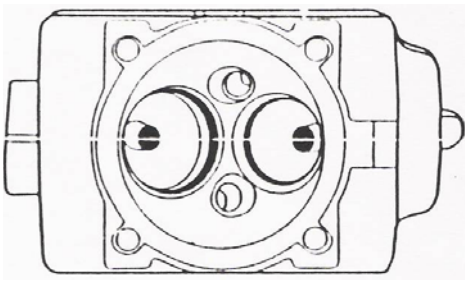
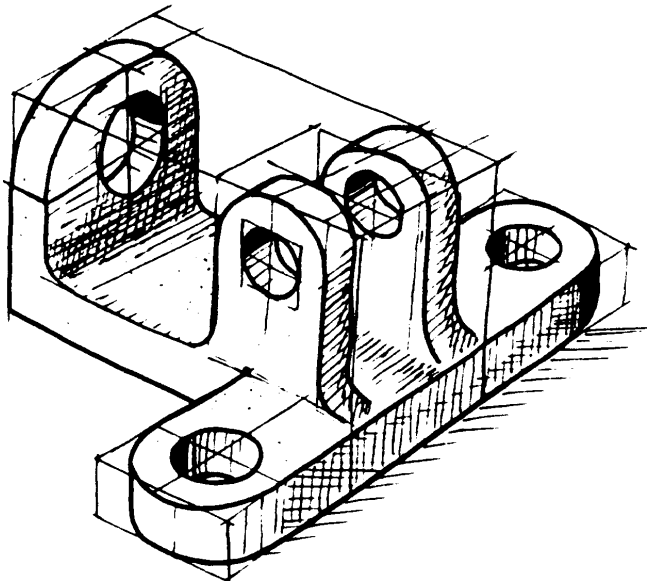
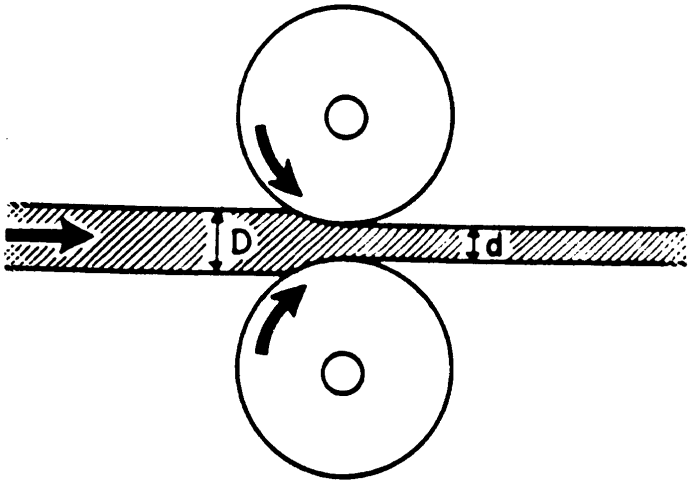


Photo **Line Drawing**

REPRESENTATION OF DIFFERENT TYPES OF CONCEPTS

	FORM	EXAMPLE
CONCEPTS BASED ON MATERIAL OBJ. (ABSTRACTION)	- FIGURATIVE REP.	A TREE, A COMPUTER
	- PICTOGRAM	TELEPHON, MEETING POINT
	- SYMBOL	A VALVE IN A CIRCUIT
CONCEPTS NOT BASED ON MATERIAL OBJ. ('THEORETICAL' CONCEPTS	- GEOMETRICAL MEANS (LINE, POINT, ETC.)	MERIDIAN, EQUATOR, POLE
	- DIAGRAM	
	- STATIC	COMPARISON OF VALUES OF DIFFERENT SHARES
	- DYNAMIC	COMPARISON IN TIME OF SHARE VALUES
	- MODEL	SAUSSURE'S MODEL
	- FORMULA	E=mc2 (Einstein's equation)
	- SYMBOL	Ø = DIAMETER DOVE OF PEACE / HOLY SPIRIT





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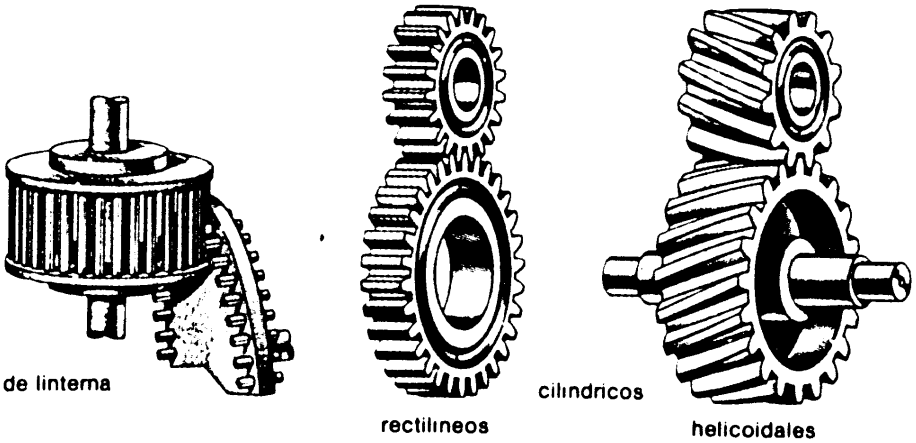

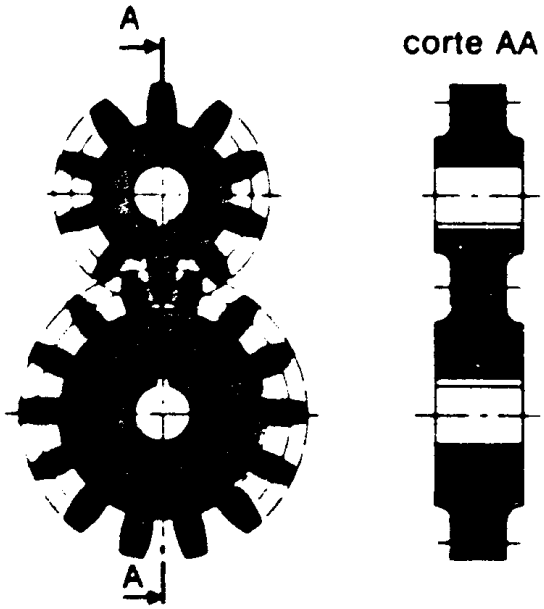
A
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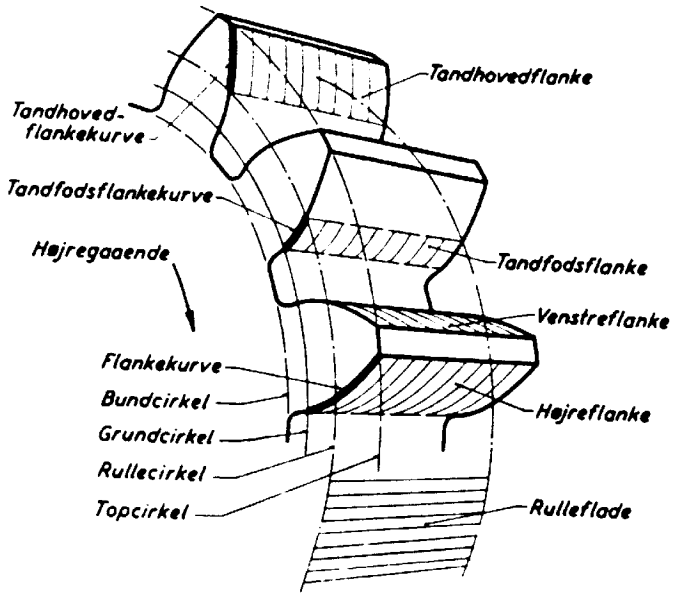
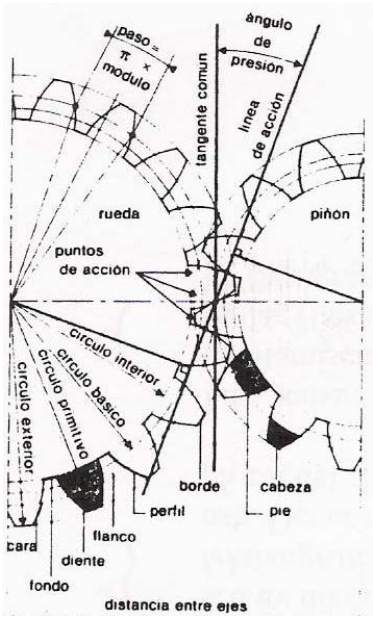
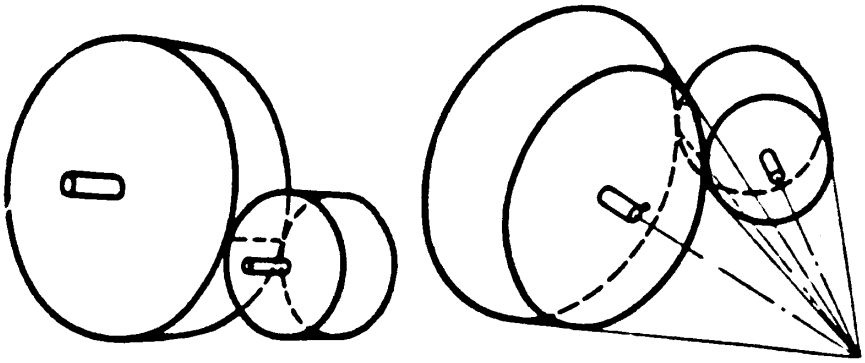

Tandhovedflanke
Tandhoved-
flankekurve
Tandfodsflankekurve
Højregaaende
Tandfodsflanke
Venstreflanke
Flankekurve
Bundcirkel
Grundcirkel
Rullecirkel
Topcirkel
Højreflanke
Rulleflade

3

4


paso = π x modulo
ángulo de presión
tangente común
línea de acción
rueda
piñon
puntos de acción
circulo interior
circulo básico
circulo primitivo
circulo exterior
borde
cabeza
perfil
pie
flanco
cara
diente
fondo
distancia entre ejes

5



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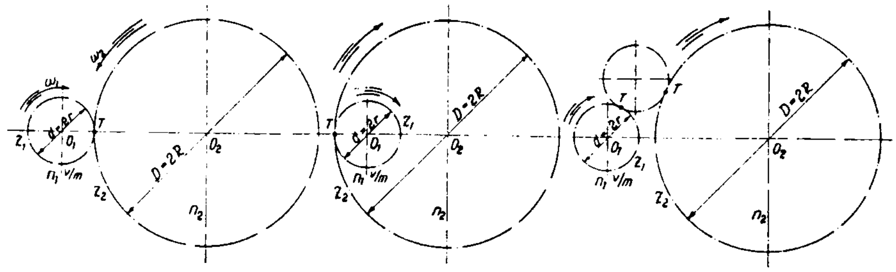

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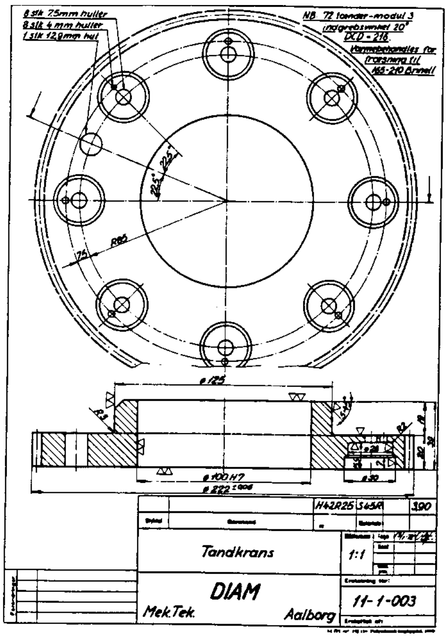


RELATIONSHIPS

DIFFERENTIATION BETWEEN:

1. **RELATIONSHIPS BETWEEN OBJECTS**
2. **RELATIONSHIPS BETWEEN CONCEPTS**
3. **RELATIONSHIPS BETWEEN CONCEPT AND TERM**

RELATIONSHIPS BETWEEN

1. **OBJECTS ARE ONTOLOGICAL RELATIONS**
2. **CONCEPTS MAY BE**

   LOGICAL (GENERIC) RELATIONS

   OR

   ONTOLOGICAL RELATIONS

RELATIONSHIPS BETWEEN CONCEPTS

I. *LOGICAL(GENERIC) RELATIONS*

--> SIMILARITY OF CONCEPTS

II. *ONTOLOGICAL RELATIONS*

1. **PARTITIVE RELATION**
   → IN SPACE
2. **SEQUENTIAL RELATION**
   → IN TIME
   → CONCEPTS REPRESENTING PROCEDURES
3. **PRAGMATIC RELATION**
4. **CAUSAL RELATION.**
   → CAUSE - EFFECT

5. **GENETIC RELATION**
   → PRODUCER - PRODUCT
6. **PRODUCTION RELATION**
   → MATERIAL - PRODUCT
7. **TRANSMISSION RELATION**
   → SENDER - RECEIVER
8. **INSTRUMENTAL RELATION**
   → TOOL - APPLICATION
9. **FUNCTIONAL RELATION**
   → ARGUMENT - FUNCTION
10. **OTHERS**
    f.ex. DEPENDENCE
    → WARD - GUARDIAN

(According to ISO 1087 (1990) and DIN 2330 (1979))

CONCEPT SYSTEM

(SYSTEM OF CONCEPTS)

Set of concepts structured according to the relations among them

ISO 1087-1

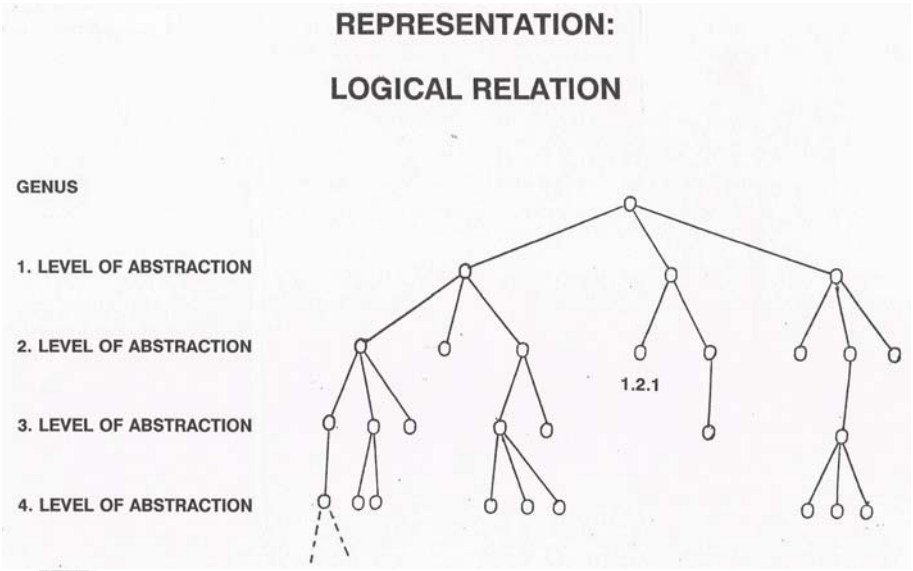
CONCEPT DIAGRAM

Graphic representation of a concept system

ISO 1087-1

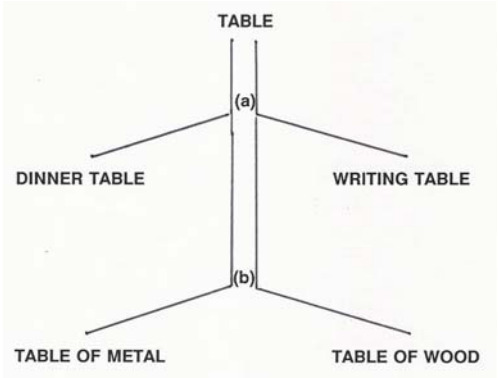
REPRESENTATION:

LOGICAL RELATION



GENERIC RELATION

VARIOUS CRITERIA OF DIVISION

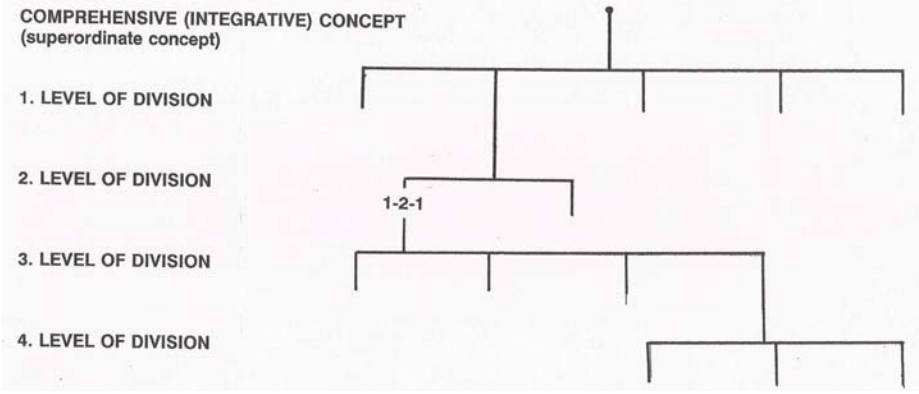


(a) division according to use

(b) division according to material

REPRESENTATION:

PARTITIVE RELATION



Bock, A. (1979): Cykelterminologi. En terminologisk undersøgelse af en cykels hoveddele. Tesina; Handelshøjskolen i København, Institut for Engelsk. En: Reiner Arntz; Heribert Picht: Introducción a la Terminología. Biblioteca del Libro. Fundación Germán Sánches Ruipérez. 1995; pág. 131/132.

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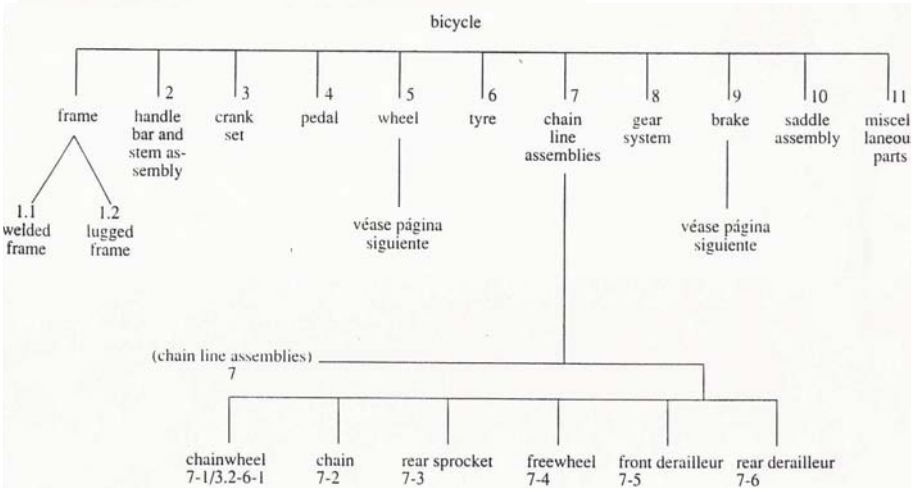
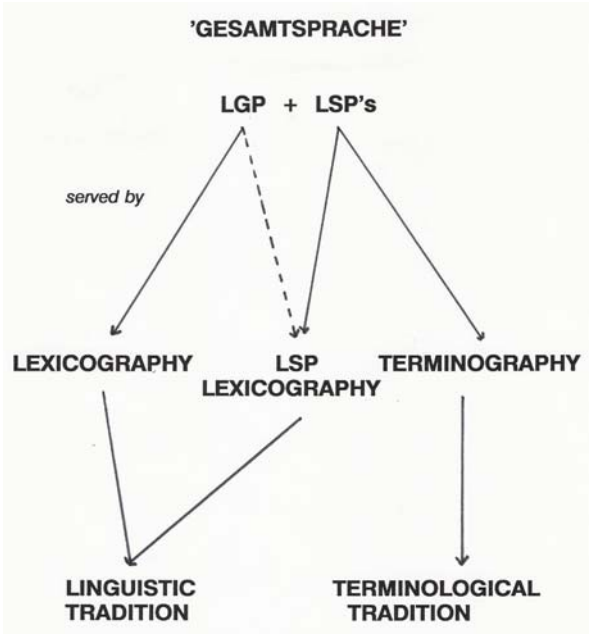


TERMINOGRAPHY

Part of terminology work concerned with the recording and presentation of terminological data

Note: Terminological data may be presented in the form of term banks, glosseries, thesauri, or other publications.

ISO 1087-1



Source: Chr. Laurén; J.Myking; H.Picht (1997): Terminologi som vetenskapsgren.

	LEXICOGR. PRODUCTS	TERMINOGR. PRODUCTS	TERM BANK
1. FORM OF PRESENTATION BOOK	DOMINANT		IRRELEVANT
2. FORM OF PRESENTATION ELECTRONIC MEDIUM	INCREASING		ONLY MEDIUM
3. NUMBER OF LANGUAGES	ONE OR MORE		NO LIMIT
4. NUMBER OF SUBJECT FIELDS	ONE OR MORE		NO LIMIT
5. SEMANTIC INFORMATION	NO OR LITTLE		NO LIMIT

6. GRAMMATICAL INFORMATION	YES	YES	NO LIMIT
7. PHRASEOL.INFORMATION	LIMITED	SOME-TIMES	NO LIMIT
8. ORDERING OF ARTICLES	MOSTLY ALPHABET.	USUALLY ALPHABET.	IRRELEVANT
9. NORMATIVE/DESCRIPTIVE	NEARLY ALWAYS DESCRIPTIVE		IRRELEVANT
10. FREQUENCY DIC.	YES	SOME-TIMES	POSSIBLE
11. ETYMOLOGICAL DIC.	YES	NO	POSSIBLE
12. DIC. OF DIALECTS	YES	NO	POSSIBLE
13. ORTHOGRAPHICAL DIC.	YES	NO	POSSIBLE

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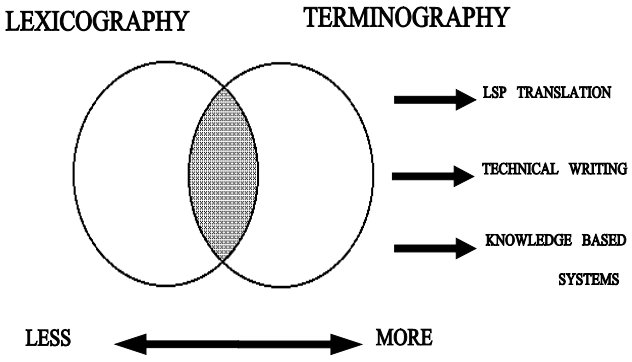
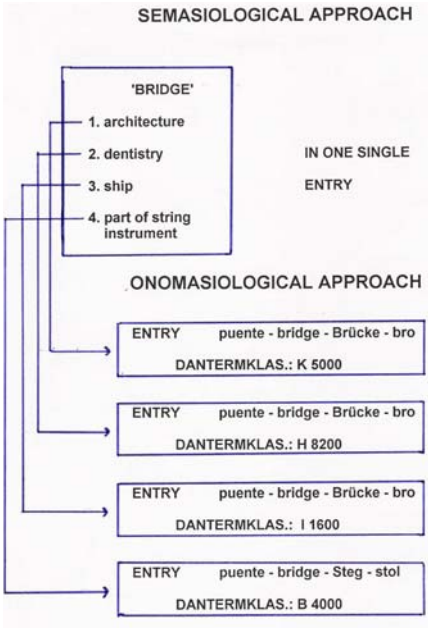
14. DIC. OF PRONUNCIATION	YES	NO	POSSIBLE
15. STILISTIC INFORMATION	YES	SOME-TIMES	NO LÍMITE
16. IDIOMATIC INFORMATION	YES	NO	POSSIBLE
17. DIC. OF FOREIGN WORDS	YES	NO	POSSIBLE
18. ILLUSTRATIONS	YES	YES	NO LIMIT
19. HYPERMEDIA	NO	NO	YES




SEMASIOLOGICAL APPROACH
'BRIDGE'
1. architecture
2. dentistry
3. ship
4. part of string instrument
IN ONE SINGLE
ENTRY
ONOMASIOLOGICAL APPROACH
ENTRY puente - bridge - Brücke - bro
DANTERMKLAS.: K 5000
ENTRY puente - bridge - Brücke - bro
DANTERMKLAS.: H 8200
ENTRY puente - bridge - Brücke - bro
DANTERMKLAS.: I 1600
ENTRY puente - bridge - Steg - stol
DANTERMKLAS.: B 4000